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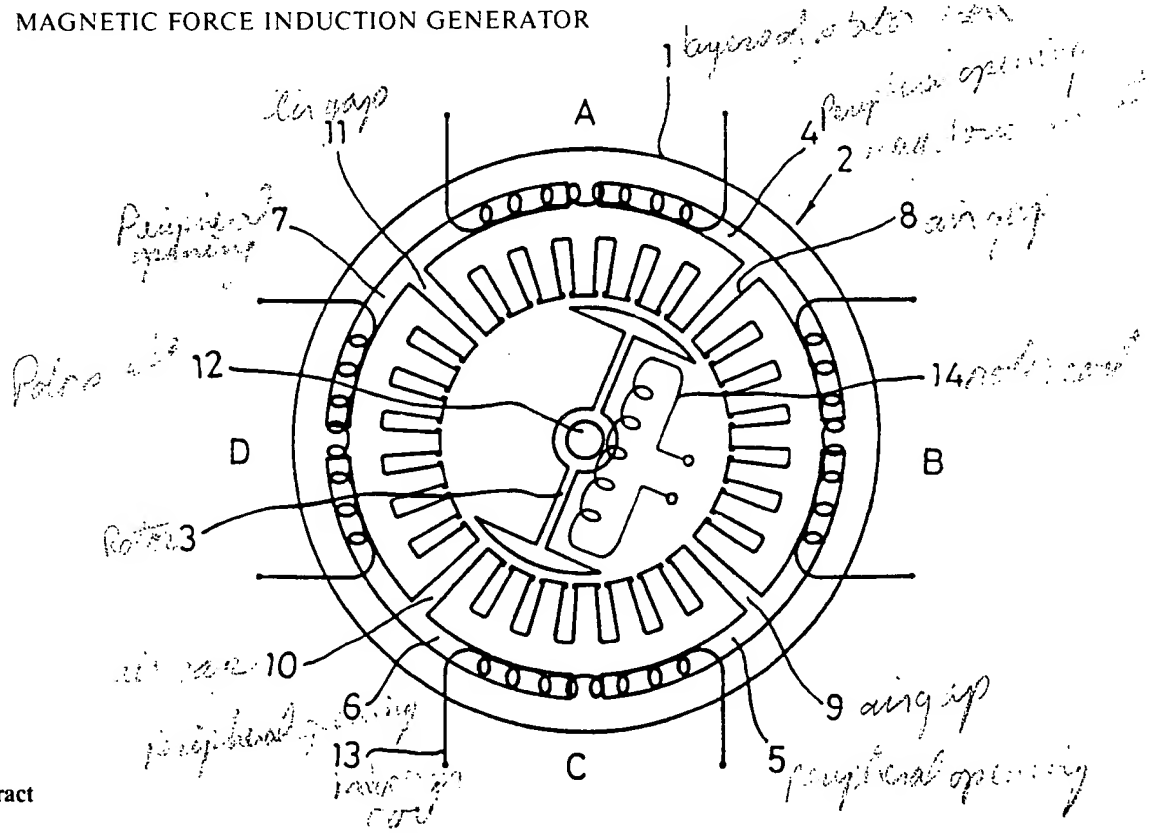

(57) Abstract

A magnetic force induction generator comprising a magnetic force induction core of layers of stator iron, a rotor having a wound rotor coil and being mounted in a central through-hole of the magnetic force induction core, the magnetic force induction core having a plurality of peripheral openings spaced at regular distance and inwardly opening prescribed air gaps communicating with the center portion of each peripheral opening. With this arrangement, the rotative force of the rotor increases and consumption of energy of the generator is minimized.

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MAGNETIC FORCE INDUCTION GENERATOR

This invention relates to a magnetic force induction generating device wherein a plurality of peripheral openings are provided in a magnetic force induction core for concentrating in a rearwardly located prescribed location the same pole as the magnetic field pole of the rotor, thus both increasing the rotative force of the rotor and minimizing the energy consumption of the generating device itself.

As shown in fig. 7, as a magnetic field flows in two directions at each pole of the rotor, a magnetic force of same pole is concentrated at each forward location of the rotor and a magnetic force of different pole is concentrated at a rearward location for serving respectively as repulsion and drawing force with respect to the rotating direction of the rotor.

As the repulsion and drawing force act as much load to the rotation of the rotor of the generator causing considerable consumption of energy of the generator, thus reducing generating efficiency and producing a little heat from the body of the generator.

SUMMARY OF THE INVENTION

An object of the present invention is to porvide a magnetic force induction generating device which minimizes the energy consumption for greatly increasing the generating efficiency and the reliability.

The magnetic force induction generating device in

accordance with the present invention comprises a plurality of peripheral openings and air gaps provided in a conventional magnetic force induction core. With this arrangement, the magnetic force having the same pole of the magnetic field of the rotor may be concentrated in a rearward location of a prescribed pole of the rotor to increase the rotative force of the rotor.

Brief Description of the Drawings

Fig. 1 is a plan view of a single-phase magnetic force induction generator;

Fig. 2 is a perspective view of the single-phase magnetic force induction generator showing a coil wound around a magnetic force induction core;

Fig. 3 shows the location of the magnetic pole produced by the induction current when a rotor rotates in the single-phase magnetic force core;

Fig. 4 is a distribution chart of the magnetic force induction core;

Figs. 5 and 6 are plan views of a three-phase generator embodying the present invention showing a rotor having one or two pairs of poles; and

Fig. 7 is a distribution chart of a magnetic force induction core mounted in a conventional generator.

Detailed Description of the Invention

Referring to the drawings and particularly to Figs. 1 and 2, a magnetic force induction generator of this

invention includes a magnetic force induction core 2 composed of several layers of stator iron 1. A rotor 3 is rotatably mounted in the central hole of the magnetic force induction core 2. A plurality of peripheral openings 4 through 7 are spaced at regular distance. Air gaps 8 through 11 are directed inwardly from the center of the peripheral openings 4 through 7.

Numerals 12, 13 and 14 respectively designate a hole for receiving rotor shaft, induction coil and rotor coil.

The operation and effect of the present invention is as follows.

The air gaps 8 through 11 are in communication with the peripheral openings 4 through 7 within which induction coils 13 are wound. The induction coils 13 within openings 4 and 6, and those with openings 5 and 7 are wound in different direction from one another.

When a prescribed current flows through the rotor coil 14 with N and S poles being respectively located at A and C as shown in Fig. 3 and the rotor 3 is rotated by external driving means, a prescribed current flow in induced in the induction coil 13 of the induction core 2.

Accordingly, as shown in Fig. 4, a prescribed magnetic field is produced in the air gaps 8 through 11 of the magnetic force induction core 2, thus producing magnetic lines of force around the peripheral openings 4 through 7.

Furthermore, prescribed poles N and S are produced at the air gaps 8 through 11 of the magnetic force induction core 2.

The winding direction of the induction coils 13 in the openings 4, 6 different from that in the openings 5,7 causes the air gaps 8, 10 of the openings 4, 6 to have different poles at the ends thereof and the air gaps 9, 11 of the openings 5, 7 to have same poles at the ends thereof, resulting in the concentration of magnetic force.

While N and S poles of the rotor 3 rotate through the air gaps 8, 10 having two poles to the locations B and D, a prescribed concentrated magnetic force in the air gaps 9, 11 serve as a pushing force to the rotating direction in response to the same pole of the rotor 3 and as a drawing force in response to different pole of the rotor 3.

In detail, while the magnetic field of N pole concentrated in the air gap 11 both pushes N pole of the rotor 3 to the rotating direction and draws S pole, and the magnetic field of S pole concentrated in the air gap 9 both pushes S pole of the rotor 3 and draws N pole, thus increasing rotative force.

When N and S poles of the rotor 3 respectively are rotating to the locations C, A from the locations B, D, the magnetic field of S and N concentrated respectively in the air gaps 9, 11 of the magnetic force induction core 2 draw N and S of the rotor 3 to the rotative direction.

The continuous rotation of the N and S poles of the rotor 3, having be drawn in the air gaps 9, 11 of concentrated different magnetic fields, to the C and A locations is complished by the rotating torque of precedented rotation.

Thereafter, N and S poles of the rotor 3 respectively rotate from C and A locations to D and A locations, the strong repulsive force is produced when N and S poles of the rotor 3 pass through the air gaps 9, 11 of the magnetic force induction core 2, thus increasing the rotating force of the rotor 3.

After rotating one time, as described above, the rotor 3 continuously rotate by the magnetic force concentrated in the air gaps 9, 11 of the magnetic force induction core 2, whereby a prescribed electromotive force is continuously induced to the induction coil 13 stably wound in the openings 4 through 7 and connected to a load.

Accordingly, the rotor 3 is continuously rotated by the concentrated magnetic field of the air gaps 9, 11, thus minimizing energy consumed in the generator itself.

Figs. 5 and 6 are another embodiments of the present invention wherein a magnetic force induction coil 2 comprises three openings and air gaps to constitute a three-phase generator. A rotor of one or two pairs of poles is mounted in the magnetic force induction coil.

The number of poles of the stator iron member 1 constituting the magnetic force induction core 2 and of the rotor 3 may be optionally changed in accordance with generating capacity and purpose of use. An induction coil 13 wound within opening of the magnetic force induction core 2 may take the form of a bar-shaped wound wire or wires wound by a single or dual wires.

The three-phase generator operates in the same manner

as the single-phase generator of the above-described invention.

As described above, as the magnetic force having the same pole as the pole of the magnetic field of the rotor is concentrated rearwardly of the pole of the rotor, the rotor is automatically rotated by the concentrated magnetic force of the rotor, thus increasing the rotative force of the rotor and minimizing energy consumption of the generator itself. Accordingly, the generating efficiency of the magnetic force induction generator may be greatly increased and reliability to the product may be heightened.

Claims:

1. A magnetic force induction generator comprising :

a magnetic force induction core of layers of stator iron, a rotor having a wound rotor coil and being mounted in a central through-hole of the magnetic force induction core, the magnetic force induction core having a plurality of peripheral openings spaced at regular distance and inwardly opening prescribed air gaps communicating with the center portion of each peripheral opening.

2. A magnetic force induction generator according to Claim 1, wherein at least two numbers of peripheral openings and the inwardly opening air gaps are provided.

Fig. 1

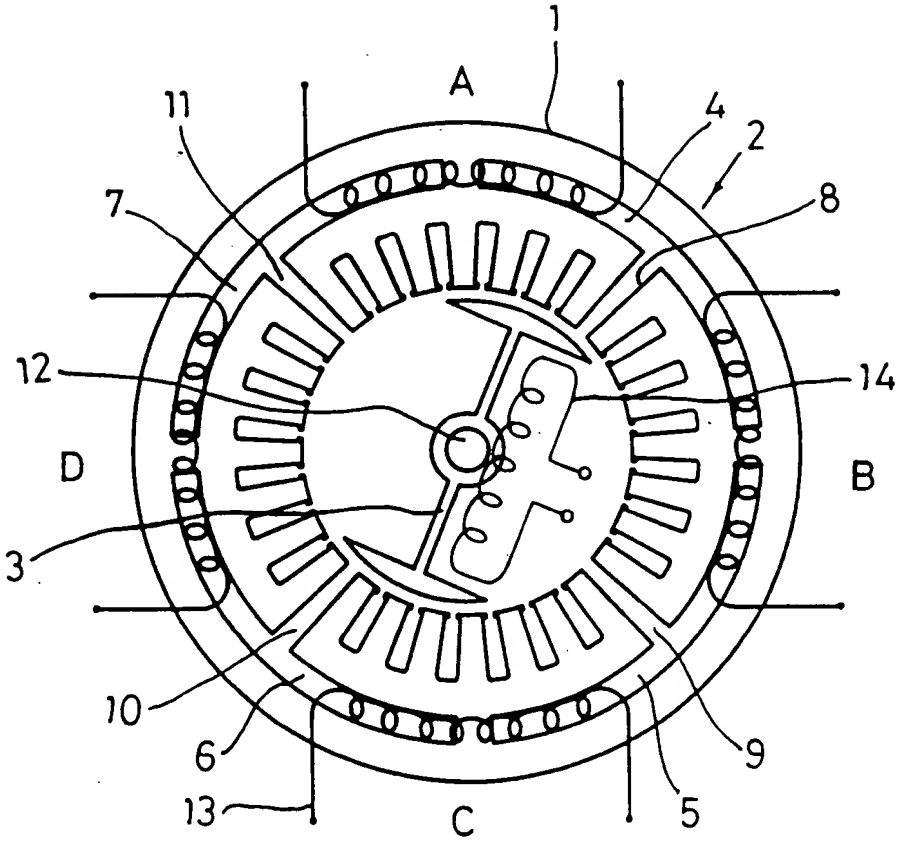


Fig. 2

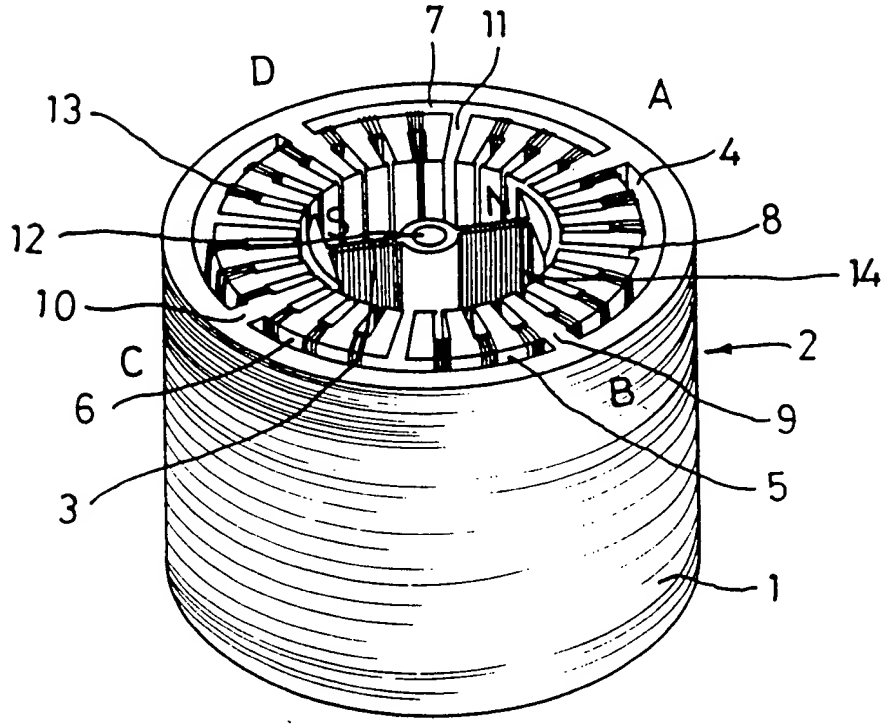


Fig.3

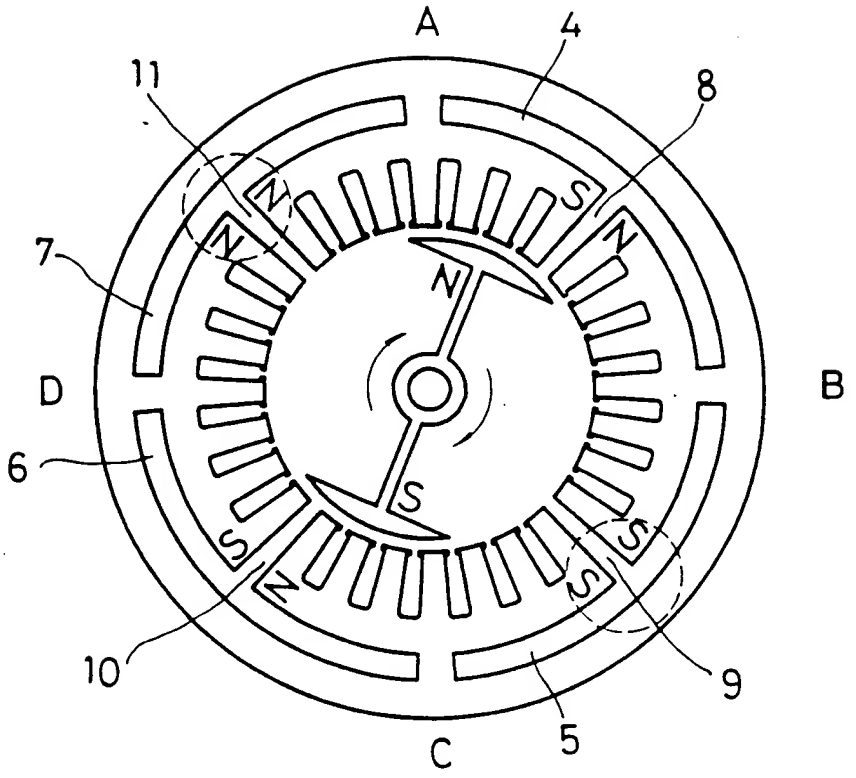


Fig.4

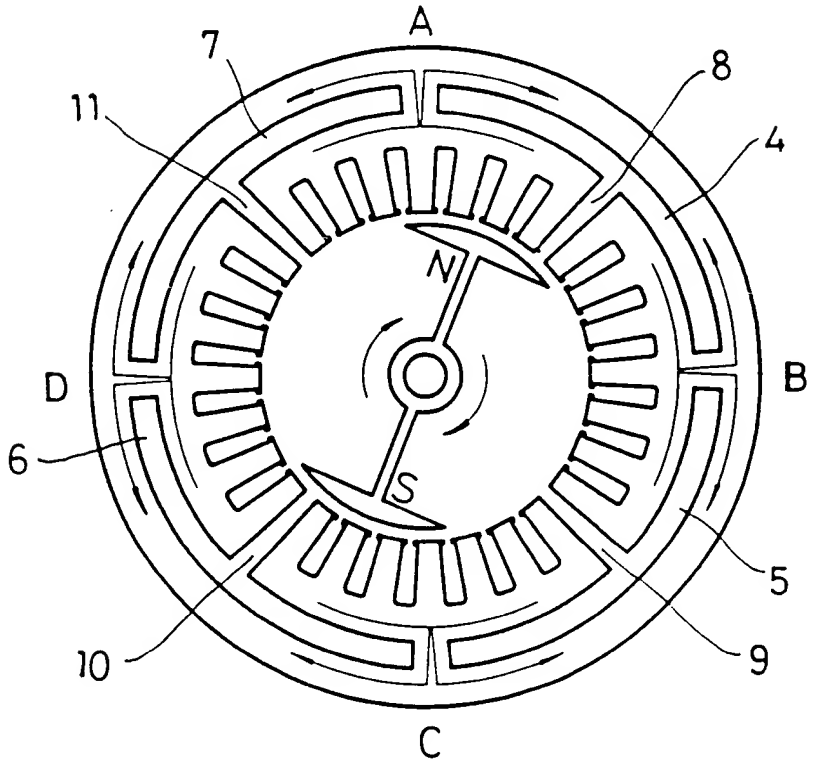


Fig. 5

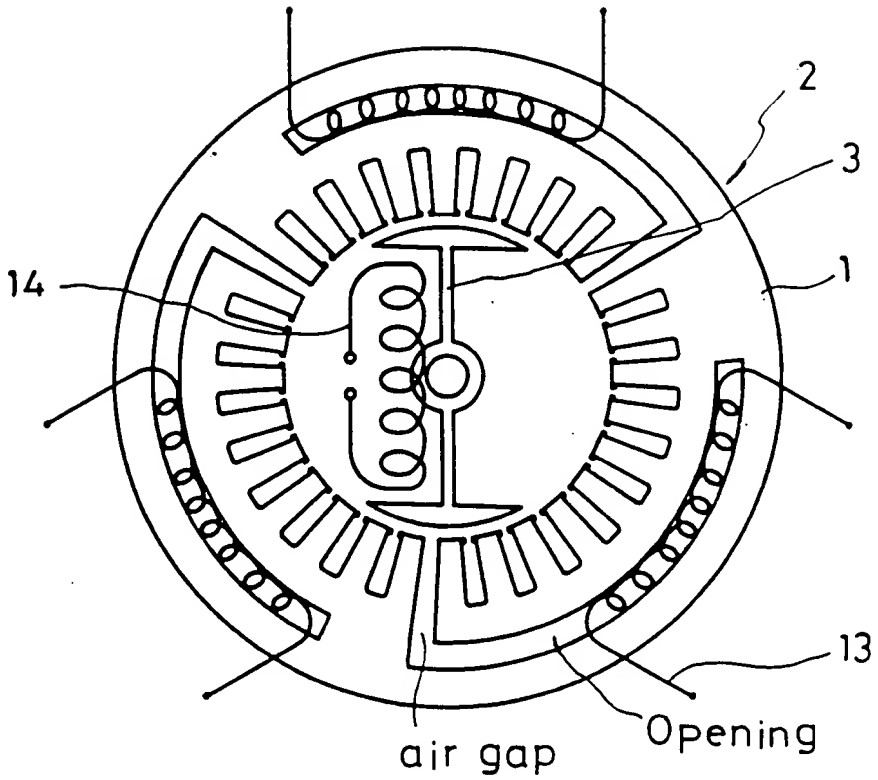


Fig. 6

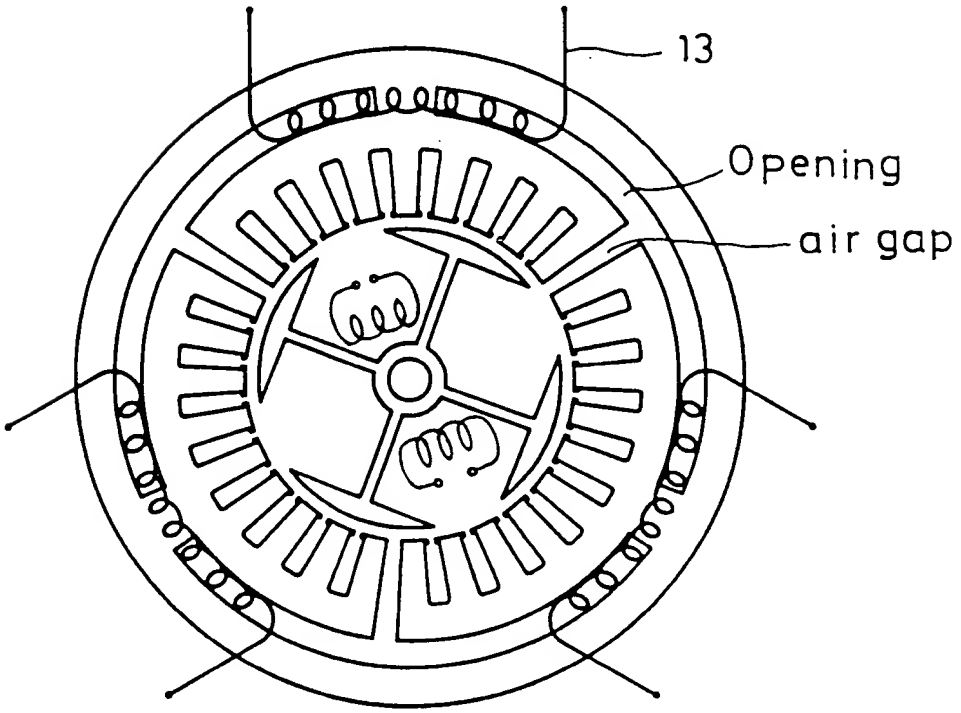
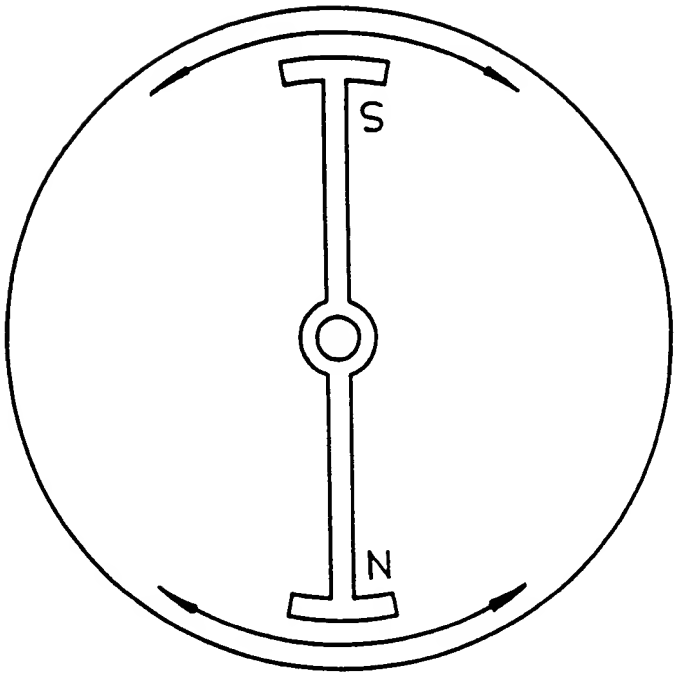


Fig.7



INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR 92/00028

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl.[5]: H 02 K 1/16

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl.[5]: H 02 K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US, A, 4 260 925 (BARRETT) 07 April 1981 (07.04.81), see column 3, line 42 to column 4, line 47; Fig. 2, 4a.	1,2
A	DE, B, 1 100 791 (LICENTIA) 02 March 1961 (02.03.61), see column 2, lines 33-52; Fig. 1, 2.	1,2
A	DE, A, 1 488 657 (SIEMENS) 12 June 1969 (12.06.69), see page 4, line 1 to page 5, line 12; Fig. 2, 3, 4.	1,2
A	US, A, 4 672 252 (SPIRK) 09 June 1987 (09.06.87), see column 2, lines 13-40; Fig.	1,2

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
15 October 1992 (15.10.92)	19 October 1992 (19.10.92)

Name and mailing address of the ISA/ AT	Authorized officer
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The effect of the technical invention, as described in the application must be called in question.

Im Recherchenbericht angeführtes Patentdokument Patent document cited in search report Document de brevet cité dans le rapport de recherche	Datum der Veröffentlichung Publication date Date de publication	Mitglied(er) der Patentfamilie Patent family member(s) Membre(s) de la famille de brevets	Datum der Veröffentlichung Publication date Date de publication
US A 4260925	07-04-81	keine - none - rien	
DE B 1100791		keine - none - rien	
DE A 1488657	12-06-69	keine - none - rien	
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